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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,535

07/19/2006

Sang Keun Lee

3449-0672PUS1

1634

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EXAMINER

GRAY, JILL M

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

04/03/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,535	<b>Applicant(s)</b> LEE, SANG KEUN	
	<b>Examiner</b> Jill Gray	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☒ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/30/2006;12/22/2008</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on January 19, 2004. It is noted, however, that applicant has not filed a certified copy of the Korean application as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Korean Patent Publication KR2003-0072729 (translation) hereinafter "Lee '729".

Lee '729 discloses a rod member comprising a rod shaped reinforcing layer formed of a fiber, a resin layer formed on an outer circumference of the reinforcing layer and a garnet layer formed in/on the resin layer, as required by present claim 1. See entire document, for example abstract and Figures 1 (representative drawing) and 3. The fiber can be carbon, glass or aramid fiber, as required by present claims 2 and 5, and the resin can be epoxy resin, acryl resin or vinyl ester resin, as required by present claims 3 and 7. See abstract and page 2 of translation. In addition, regarding the language of "some of the garnets being mixed in the resin layer and rest of garnets being protruded above the resin layer" in present claim 5, Figure 1 appears to disclose

Art Unit: 1794

some of the particulate material being mixed in the resin layer and the rest being protruded above the resin layer. Accordingly, this requirement has been met.

Therefore, the teachings of Lee '729 anticipates the invention as claimed in present claims 1-3, 5 and 7.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Korean Patent Publication KR20010057885 (translation) hereinafter "Cha".

Cha discloses a rod member comprising a rod shaped reinforcing material formed of a fiber, a resin layer formed on an outer circumference of the reinforcing layer and a garnet layer formed on the resin layer, as required by present claim 1. See entire document, and for example, abstract and Figure 1 (representative drawing). In addition, Cha discloses that the fiber can be carbon, glass or aramid, per claim 2, and that the resin layer can be epoxy or vinyl ester resin, as required by present claim 3. See page 4 of the translation.

Therefore, the teachings of Cha anticipate the invention as claimed in present claims 1-3.

5. Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Korean Patent Publication KR2001-0009973 (translation) hereinafter "Lee '973".

Lee discloses a rod member comprising a rod-shaped reinforcing layer formed of a fiber, a resin layer formed on an outer circumference of the reinforcing layer and a garnet layer formed in/on the resin layer as required by present claim 1. See entire document, for example abstract and Figure 3. In addition, Lee '973 discloses that the fiber can be carbon fiber, glass fiber or aramid fiber as required by present claims 2 and

Art Unit: 1794

5 and that the resin layer can be epoxy or acryl resin, per claims 3 and 7. See pages 2 and 3 of translation. Regarding the language of “some of the garnets being mixed in the resin layer and rest of garnets being protruded above the resin layer” in present claim 5, Figure 3 appears to disclose some of the particulate material being mixed in the resin layer and the rest being protruded above the resin layer. Accordingly, this requirement has been met.

Therefore the teachings of Lee '973 anticipate the invention as claimed in present claims 1-3, 5, and 7.

6. Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by DeMaster 4,061,268.

DeMaster discloses a mat comprising a rod-shaped reinforcing layer formed of a fiber (note the “strands” as disclosed at column 2, lines 58-64), a resin layer formed on an outer circumference of the reinforcing layer, and a layer of abrasive granules on said resin layer. See entire document, and for example, abstract, Figure 4, and column 2, lines 47-67. In addition, DeMaster discloses that the abrasive granules can be garnet, as required by present claim 1. See column 3, line 31. The resin layer can be epoxy, as required by claim 3, and the particles have a particle an average size of between about 400 and 2500 micrometers as required by present claim 4. See column 3, lines 14-15 and 33-35.

Accordingly, the teachings of DeMaster anticipate the invention as claimed in present claims 1 and 3-4.

***Claim Rejections - 35 USC § 103***

Art Unit: 1794

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korean Patent Publication KR2003-0072729 (translation) hereinafter "Lee '729" or Korean Patent Publication KR2001-0009973 (translation) hereinafter "Lee '973", each as applied above to claims 1-3, 5, and 7.

Lee '729 and '973 each teach a rod member comprising a fiber, a resin layer formed on the fiber and a garnet layer formed in/on the resin layer, but do not teach the specific particle size or the mass % of the reinforcing member based on the mass of the rod.

Regarding claim 4, this claim is drawn to the size of the particles. It is the examiner's position that changes in size ordinarily are not a matter of invention absent a clear showing of unexpected or superior properties that are directly related to the

Art Unit: 1794

particle size. *In re Rose*, 105 USPQ 237, (CCPA 1955). Applicants are invited to provide such evidence.

Regarding claim 6, which is drawn to the mass % of the reinforcing member, it is the examiner's position that it where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955).

10. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korean Patent Publication KR2001-0057885 (translation) hereinafter "Cha" as applied above to claim 1-3.

Cha is as applied above and discloses a method for making a rod member comprising the steps of forming a reinforcing member using a fiber, forming a resin layer on an outer circumference of the reinforcing member and forming a garnet layer on an outer circumference of the resin layer through a spraying process, as required by present claim 8. See abstract. Cha does not teach a first and second garnet spraying process required by present claim 8.

In this regard, it is the examiner's position that it would have been obvious to the skilled artisan to include a second garnet spraying process to optimize the particulate loading on the fiber substrate. In addition, a second spraying process would enhance the garnet particles that are located on the surface of the reinforcing member and not embedded within the resin layer. This would increase the surface area of the reinforcing member and enhance bonding to concrete.

Regarding claims 9-10, Cha discloses that his fiber can be carbon, glass or aramid, per claim 9, and that the resin layer can be epoxy or vinyl ester resin, as required by present claim 10. See page 4 of the translation.

Regarding claim 11, this claim is drawn to the size of the particles. It is the examiner's position that changes in size ordinarily are not a matter of invention absent a clear showing of unexpected or superior properties that are directly related to the particle size. *In re Rose*, 105 USPQ 237, (CCPA 1955). Applicants are invited to provide such evidence.

Regarding claim 12, which is drawn to the mass % of the reinforcing member, it is the examiner's position that it where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955).

Regarding claim 13, it would have been obvious to determine and adjust the amount of garnets applied in each spraying process during routine experimentation, commensurate with the desired properties and end use of the resultant coated reinforcing member. For example, applying a smaller amount of particulate materials in the first spray process would result in greater amounts of the garnets being embedded within the resin layer. This increases the toughness of said layer. A secondary spraying process with a greater amount of particulate materials would increase the chance of a substantially continuous surface coating, increased surface area and enhanced bonding to the matrix material.



Therefore, the teachings of Cha would have rendered obvious the invention as claimed in present claims 8-13.

No claims are allowed.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/

Application/Control Number: 10/586,535  
Art Unit: 1794

Page 9

Primary Examiner  
Art Unit 1794

jmg